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EXAMINER

FLETCHER III, WILLIAM P

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/700,747

Applicant(s)

NASLI-BAKIR ET AL.

Examiner

William P. Fletcher III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-46 and 56-94 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-46 and 56-94 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Amendment***

1. Applicant's response filed 26 OCT 2004 is acknowledged. The examiner awaits the secondary evidence discussed in the personal interview of 8 NOV 2004. It is the examiner's understanding that applicant desires to submit this secondary evidence in the form of a supplemental to the 26 OCT response. In a telephone conversation with applicant's representative (David J. Serbin, Reg. No. 30,589), held 11 JAN 2005, it was established that the examiner had not clearly articulated the date by which such a supplemental needed to be submitted in order to give it adequate consideration. Since, in accordance with Office procedure, this case is now up for action (MPEP § 708), the instant Office action is being prepared. As a result of recent rule changes, entry of supplemental communications is no longer a matter of right.¹ Both the examiner and applicant's representative agreed that, in view of the rule changes, submission of the above-mentioned secondary evidence after-final does not place applicant at any disadvantage.

Response to Arguments

2. Applicant requests clarification of the rejection of claim 94 under 35 U.S.C. 112, 2nd Para., set-forth in paragraphs 7-8 of the Office action mailed 22 APR 2004. As stated previously, there is no antecedent basis for the limitations "the later applied strands of one component" and "the corresponding previously applied strands of the other component." The word "the" at the beginning of each of these limitations implies that they refer back to a previous reference to/recitation of these terms in the claim. No such previous reference/recitation exists in

¹ *Changes to Support Implementation of the United States Patent and Trademark Office 21st Century Strategic Plan*, Final Rule, 69 Fed. Reg. 56481 (September 21, 2004), 1287 Off. Gaz. Pat. Office 67 (October 12, 2004).

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claim 94 as-written. Consequently, the claim is indefinite. See MPEP § 2173.05(e). Amending the claim to delete the word “the” from each of these limitations would overcome this rejection.

3. Applicant’s arguments filed 26 OCT 2004 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Against the combination of references, applicant argues: (a) “the Examiner fails to explain how the substitution of spraying or strands for a specialized applicator roll can be effected without altering the result achieved by the Perciwall invention;” and (b) “the Examiner fails to explain how the substitution of amino resins for formaldehyde based resins are possible, given the specific object of Andersson ‘024 of solving the problem of bleeding from glue joints formed with formaldehyde adhesives.”

With respect to (a), it is clear that application of the components via roller or via strands yields the same result: adhesive bonding of the two surfaces. Further, application as separate strands prevents pre-curing of the gluing system to the greatest possible extent. Consequently, modification of Perciwall in this fashion not only achieves the same result but is also advantageous. Consequently, this argument is not persuasive (see MPEP § 2144).

With respect to (b), Andersson ‘024 clearly teaches the advantages of separate application of resin and hardener in a two-component gluing system (see page 1). Because Lehnert teaches that the formaldehyde gluing system of Andersson and the amino resin gluing

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system claimed by applicant are both conventional in the art for joining wood surfaces, it would have been obvious to substitute one for the other. The advantages associated with keeping the two components of a two-component gluing system are clearly not exclusive to any one particular type of two-component system. The bleeding from glue joints cited by applicant is clearly disclosed by Andersson as being a result of uneven *physical* mixing of the two components at the joint and has nothing to do with the particular chemical make-up of the two-component system (hence application in the form of strands, see paragraph bridging pages 1-2). Consequently, this argument is not persuasive.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claim 94 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.** The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

This claim recites “wherein the hardener component is applied on top of the resin component.” The originally-filed disclosure does not support this limitation: the specification recites that the components may be applied by spraying, as strands, or in some combination thereof, and that, in such an arrangement, the hardener is applied atop the resin, but does not

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support such an arrangement for *any and all* methods of application. Possession of a specie or species does not support possession of a genus.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claim 94 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

8. Claim 94 recites the limitation “the later applied strands of one component” and “the previously applied strands of the other component” in lines 4-6. There is insufficient antecedent basis for this limitation in the claim.

Specification

9. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: METHOD OF SEPARATE APPLICATION OF RESIN AND HARDENER COMPONENTS OF AN AMINO RESIN GLUING SYSTEM.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 39, 41 – 46, 56 – 59, 70 – 76, and 78 – 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perciwall (EP 0 016 740 A1) in view of Andersson (EP 0 207 024 A2).

Perciwall teaches a method of applying a gluing system to a substrate, the gluing system having an amino resin component and an acid hardener component [abstract and p. 4, l. 24 – p. 5, l. 22]. The gluing system is specifically a melamine-formaldehyde or urea-formaldehyde system used as an adhesive for the joining of wooden surfaces to form a laminate [p. 1, l. 1 – p. 2, l. 34, for example; p. 4, ll. 24 – 33; and p. 8, ll. 2 – 6]. The acid hardener may be formic acid [p. 5, l. 1]. The two components are kept separate right up to the joining of the two surfaces [p. 1, ll. 10 – 34].

Perciwall is silent with respect to whether or not the hardener comprises a filler. Based on this fact, it is the examiner's position that one of ordinary skill in the art would have reasonably interpreted the hardener of Perciwall as free from filler. Please note: a filler amount of less than a certain % by weight is inclusive of no filler at all.

Perciwall does not teach feeding the amino resin and hardener components to at least first and second orifices, respectively, or that the components are discharged through the orifices in the form of strands or as a spray onto the substrate.

Andersson teaches a method of applying a two-component gluing system to a substrate in which the resin component and the hardener component are separately applied to the substrate in the form of separate, parallel strands [abstract]. The components are applied through a nozzle (i.e., orifice) [p. 6, ll. 9 – 17]. The two components do not contact each other until the substrate surfaces are joined together [p. 6, ll. 15 – 17].

It would have been obvious to one of ordinary skill in the art to modify the process of Perciwall so as to apply the components in the form of separate, parallel strands, as taught by Andersson. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of preventing pre-curing of the adhesive to the greatest extent possible.

Although Andersson teaches application of the components from a nozzle, the reference does not specify whether it is the same nozzle or two separate, discrete nozzles. Both Perciwall and Andersson teach that pre-curing is undesirable because it necessitates frequent cleaning of the application apparatus [Perciwall: p. 1, ll. 9 – 21 and Andersson: p. 1]. Based on these teachings, it would have been obvious to one of ordinary skill in the art to apply each component from its own, individual, dedicated nozzle, so as to avoid fouling of the nozzle that would require cleaning.

With specific respect to claims 46, 71, 83, and 88, Perciwall is silent as to the amount of volatile acid present in the hardener composition. Generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical [MPEP § 2144.05(II)(A)]. Further, it is the examiner's position that the amount of volatile acid in the hardener composition will effect the setting time of the resin component, and will depend on other components present in the

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hardener composition, as well as the nature of the substrate to which the composition is applied. Volatile acid concentration is, therefore, a result-effective variable. Absent clear and convincing evidence of unexpected results demonstrating the criticality of the claimed volatile acid concentration, it would have been obvious to one of ordinary skill in the art to optimize such a result effective variable by routine experimentation [MPEP § 2144.05(II)(B)].

With specific respect to claims 59, 75, and 93, Perciwall teaches that “preferably the hardener component...does not contain any thickening additives” [p. 5, ll. 20 – 22]. It is clear from this teaching that, although not *preferred*, thickeners *may* be present in the hardener.

With specific request to claims 42 – 45 and 79 – 82, it is clear that, as soon as the components are mixed, curing begins. The particular physical orientation of the strands on the substrate effect the speed and degree of curing; such would have been readily apparent to one of ordinary skill in the art. Consequently, absent clear and convincing evidence to the contrary, it would have been obvious to select the orientation of resin and hardener strands to give the desired curing rate and substrate coverage. In other words, for a quicker cure, strands are applied with a greater degree of overlap so that curing may begin before the substrates are joined. For a longer cure, strands are applied with a lesser degree of overlap.

13. Claims 40 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perciwall (EP 0 016 740 A1) in view of Andersson (EP 0 207 024 A2) as applied to claims 39 and 76, respectively, above, and further in view of Menger (US 2,015,806 A).

The combined teaching of Perciwall in view of Andersson re: claims 39 and 76 is detailed above. Neither of these references teach that the resin component is applied in the form of strands and, thereafter, the hardener is applied by means of spraying.

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Menger teaches a process for the adhesive joining of wood in which a resin and hardener are separately applied, the hardener applied by spraying [c. 2, ll. 32 – 37].

It would have been obvious to one of ordinary skill in the art to modify the process of Perciwall in view of Andersson so as to apply the hardener by spraying, as taught by Menger. One of ordinary skill would have been motivated to do so by the desire and expectation of successfully applying the hardener to the resin-coated substrate.

14. Claims 60 – 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perciwall (EP 0 016 740 A1) in view of Andersson (EP 0 207 024 A2) and Toshio (JP 61-040137).

The combined teachings of Perciwall and Andersson is detailed above. Neither of these references teaches that the resin and hardener components are discharged from different hollow members each having a plurality of orifices, the orifices of one said hollow member being either aligned in, or parallel displaced in, a machine direction in relation to the corresponding orifices of the other said hollow member.

Toshio teaches a process for the manufacture of a laminate in which the components are applied in strands from hollow members each having a plurality of orifices, the orifices being aligned in, or parallel displaced in, a machine direction in relation to the corresponding orifices of the other said hollow member [abstract and Fig. 1].

It would have been obvious to one of ordinary skill in the art to modify the process of Perciwall in view of Andersson so as to utilize the hollow application members of Toshio. One of ordinary skill would have been motivated to do so by the desire and expectation of successfully applying the components of the resin to the substrate.

With specific request to claims 61 – 64, it is clear that, as soon as the components are mixed, curing begins. The particular physical orientation of the strands on the substrate effect the speed and degree of curing; such would have been readily apparent to one of ordinary skill in the art. Consequently, absent clear and convincing evidence to the contrary, it would have been obvious to select the orientation of resin and hardener strands to give the desired curing rate and substrate coverage. In other words, for a quicker cure, strands are applied with a greater degree of overlap so that curing may begin before the substrates are joined. For a longer cure, strands are applied with a lesser degree of overlap.

With specific respect to claim 65, Perciwall is silent as to the amount of volatile acid present in the hardener composition. Generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical [MPEP § 2144.05(II)(A)]. Further, it is the examiner's position that the amount of volatile acid in the hardener composition will effect the setting time of the resin component, and will depend on other components present in the hardener composition, as well as the nature of the substrate to which the composition is applied. Volatile acid concentration is, therefore, a result-effective variable. Absent clear and convincing evidence of unexpected results demonstrating the criticality of the claimed volatile acid concentration, it would have been obvious to one of ordinary skill in the art to optimize such a result effective variable by routine experimentation [MPEP § 2144.05(II)(B)].

With specific respect to claims 69, Perciwall teaches that “preferably the hardener component...does not contain any thickening additives” [p. 5, ll. 20 – 22]. It is clear from this teaching that, although not *preferred*, thickeners *may* be present in the hardener.

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15. **Claims 39, 41 – 45, 56 – 59, 70 – 76, 78 – 82, 84 – 87, and 89 – 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson (US 0 207 024 A2) in view of Lehnert (WO 89/05221 A1).**

Andersson is described in the preceding paragraphs. This reference does not teach that the gluing system is an amino resin gluing system or feeding the amino resin and hardener components to at least first and second orifices, respectively.

The gluing system of Andersson is a formaldehyde-based adhesive, preferably resorcinol-formaldehyde or resorcinol-phenolformaldehyde [p. 2, ll. 5 – 11].

Lehnert teaches the equivalence of phenol and amino resins as conventional two-component adhesives in the art of joining wooden surfaces to form laminates, including condensation products of formaldehyde and urea and/or melamine [p. 1, ll. 28 – 31 and p. 3, l. 37 – p. 4, l. 9].

Based on this teaching of equivalence, it would have been obvious to one of ordinary skill in the art to modify the process of Andersson by substituting, as the gluing system, the amino resin gluing system of Lehnert. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of successfully joining wooden surfaces to form a laminate.

Lehnert is silent with respect to whether or not the hardener component includes a filler. Based on this fact, it is the examiner's position that one of ordinary skill in the art would have reasonably interpreted the hardener of Lehnert as free from filler. Please note: a filler amount of less than a certain % by weight is inclusive of no filler at all.

As noted above, it would have been obvious to one of ordinary skill in the art to apply each component from its own individual, dedicated nozzle, so as to avoid fouling of the nozzle that would require cleaning.

With specific respect to claim 59, Lehnert is silent with respect to whether or not the hardener component includes a thickener. Based on this fact, it is the examiner's position that one of ordinary skill in the art would have reasonably interpreted the hardener of Lehnert as free from thickener.

With specific request to claims 42 – 45 and 79 – 82, it is clear that, as soon as the components are mixed, curing begins. The particular physical orientation of the strands on the substrate effect the speed and degree of curing; such would have been readily apparent to one of ordinary skill in the art. Consequently, absent clear and convincing evidence to the contrary, it would have been obvious to select the orientation of resin and hardener strands to give the desired curing rate and substrate coverage. In other words, for a quicker cure, strands are applied with a greater degree of overlap so that curing may begin before the substrates are joined. For a longer cure, strands are applied with a lesser degree of overlap.

16. Claims 46, 83, and 88 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Andersson (EP 0 207 024 A2) in view of Lehnert (WO 89/05221 A1), as applied to claims 49, 80, and 87, respectively, above, in further view of Perciwall (EP 0 016 740 A1).

The combined teaching of Andersson and Lehnert is detailed above. Neither of these references teaches that the hardener comprises formic acid in an amount of 10 – 30% by weight, although Lehnert does teach: “When the adhesive is an amino resin the hardener can for example

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be an inorganic or organic acid, such as phosphoric acid, trichloroacetic acid, citric acid or maleic acid” [p. 4, ll. 21 – 24].

Perciwall teaches the equivalency of formic acid with phosphoric, trichloroacetic, citric, and maleic acid as a hardener for amino resin systems [p. 4, l. 37 – p. 5, l. 2]. Consequently, it would have been obvious to one of ordinary skill in the art to modify the process of Andersson in view of Lehnert so as to utilize, as the hardener composition, a composition comprising formic acid, as suggested by Perciwall. One of ordinary skill would have been motivated to do so by the desire and expectation of successfully curing the amino resin.

Further, Perciwall is silent as to the amount of volatile acid present in the hardener composition. Generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical [MPEP § 2144.05(II)(A)]. Further, it is the examiner’s position that the amount of volatile acid in the hardener composition will effect the setting time of the resin component, and will depend on other components present in the hardener composition, as well as the nature of the substrate to which the composition is applied. Volatile acid concentration is, therefore, a result-effective variable. Absent clear and convincing evidence of unexpected results demonstrating the criticality of the claimed volatile acid concentration, it would have been obvious to one of ordinary skill in the art to optimize such a result effective variable by routine experimentation [MPEP § 2144.05(II)(B)].

17. Claims 40 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson (EP 0 207 024 A2) in view of Lehnert (WO 89/05221 A1) as applied to claims 39 and 76, respectively, above, and further in view of Menger (US 2,015,806 A).

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The combined teaching of Andersson and Lehnert re: claims 39 and 76 is detailed above. Neither of these references teach that the resin component is applied in the form of strands and, thereafter, the hardener is applied by means of spraying.

Menger teaches a process for the adhesive joining of wood in which a resin and hardener are separately applied, the hardener applied by spraying [c. 2, ll. 32 – 37].

It would have been obvious to one of ordinary skill in the art to modify the process of Andersson in view of Lehnert so as to apply the hardener by spraying, as taught by Menger. One of ordinary skill would have been motivated to do so by the desire and expectation of successfully applying the hardener to the resin-coated substrate.

18. Claims 60 – 64 and 66 – 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson (EP 0 207 024 A2) in view of Lehnert (WO 89/05221 A1) and Toshio (JP 61-040137).

The combined teachings of Andersson and Lehnert is detailed above. Neither of these references teaches that the resin and hardener components are discharged from different hollow members each having a plurality of orifices, the orifices of one said hollow member being either aligned in, or parallel displaced in, a machine direction in relation to the corresponding orifices of the other said hollow member.

Toshio teaches a process for the manufacture of a laminate in which the components are applied in strands from hollow members each having a plurality of orifices, the orifices being aligned in, or parallel displaced in, a machine direction in relation to the corresponding orifices of the other said hollow member [abstract and Fig. 1].

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It would have been obvious to one of ordinary skill in the art to modify the process of Andersson in view of Lehnert so as to utilize the hollow application members of Toshio. One of ordinary skill would have been motivated to do so by the desire and expectation of successfully applying the components of the resin to the substrate.

With specific request to claims 61 – 64, it is clear that, as soon as the components are mixed, curing begins. The particular physical orientation of the strands on the substrate effect the speed and degree of curing; such would have been readily apparent to one of ordinary skill in the art. Consequently, absent clear and convincing evidence to the contrary, it would have been obvious to select the orientation of resin and hardener strands to give the desired curing rate and substrate coverage. In other words, for a quicker cure, strands are applied with a greater degree of overlap so that curing may begin before the substrates are joined. For a longer cure, strands are applied with a lesser degree of overlap.

19. Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson (EP 0 207 024 A2) in view of Lehnert (WO 89/05221 A1) and Toshio (JP 61-040137), as applied to claim 60 above, in further view of in further view of Perciwall (EP 0 016 740 A1).

The combined teaching of Andersson, Lehnert, and Toshio is detailed above. None of these references teaches that the hardener comprises formic acid in an amount of 10 – 30% by weight, although Lehnert does teach: “When the adhesive is an amino resin the hardener can for example be an inorganic or organic acid, such as phosphoric acid, trichloroacetic acid, citric acid or maleic acid” [p. 4, ll. 21 – 24].

Perciwall teaches the equivalency of formic acid with phosphoric, trichloroacetic, citric, and maleic acid as a hardener for amino resin systems [p. 4, l. 37 – p. 5, l. 2]. Consequently, it

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would have been obvious to one of ordinary skill in the art to modify the process of Andersson in view of Lehnert and Toshio so as to utilize, as the hardener composition, a composition comprising formic acid, as suggested by Perciwall. One of ordinary skill would have been motivated to do so by the desire and expectation of successfully curing the amino resin.

Additionally, Perciwall is silent as to the amount of volatile acid present in the hardener composition. Generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical [MPEP § 2144.05(II)(A)]. Further, it is the examiner's position that the amount of volatile acid in the hardener composition will effect the setting time of the resin component, and will depend on other components present in the hardener composition, as well as the nature of the substrate to which the composition is applied. Volatile acid concentration is, therefore, a result-effective variable. Absent clear and convincing evidence of unexpected results demonstrating the criticality of the claimed volatile acid concentration, it would have been obvious to one of ordinary skill in the art to optimize such a result effective variable by routine experimentation [MPEP § 2144.05(II)(B)].

20. Claim 94 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perciwall (EP 0 016 740 A1) in view of Andersson (EP 0 207 024 A2).

Perciwall teaches a method of applying a gluing system to a substrate, the gluing system having an amino resin component and an acid hardener component (abstract and 4:24-5:22). The gluing system is specifically a melamine-formaldehyde or urea-formaldehyde system used as an adhesive for the joining of wooden surfaces to form a laminate (1:1-2:34, for example; 4:24-33; and 8:2-6). The acid hardener may be formic acid (5:1). The two components are kept separate

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right up to the joining of the two surfaces (1:10-34). Perciwall is silent with respect to whether or not the hardener comprises a filler. Based on this fact, it is the examiner's position that one of ordinary skill in the art would have reasonably interpreted the hardener of Perciwall as free from filler. Please note: a filler amount of less than a certain % by weight is inclusive of no filler at all.

Perciwall does not teach that the components are separately applied in the form of strands onto the substrate.

Andersson teaches a method of applying a two-component gluing system to a substrate in which the resin component and the hardener component are separately applied to the substrate in the form of separate, parallel strands (abstract). The two components do not contact each other until the substrate surfaces are joined together (6:15-17).

It would have been obvious to one of ordinary skill in the art to modify the process of Perciwall so as to apply the components in the form of separate, parallel strands, as taught by Andersson. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of preventing pre-curing of the adhesive to the greatest extent possible. Nevertheless, it is clear that, as soon as the components are mixed, curing begins. The particular physical orientation of the strands on the substrate effect the speed and degree of curing; such would have been readily apparent to one of ordinary skill in the art. Consequently, absent clear and convincing evidence to the contrary, it would have been obvious to one of ordinary skill in the art to select the orientation of resin and hardener strands to give the desired curing rate and substrate coverage. In other words, for a quicker cure, strands are applied with a greater degree of overlap so that curing may begin before the substrates are joined.

Lastly, Perciwall is silent with respect to the amount of volatile acid present in the hardener composition. Generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical (see MPEP § 2144.05(II)(A)). Further, it is the examiner's position that the amount of volatile acid in the hardener composition will effect the setting time of the resin component, and will depend on other components present in the hardener composition, as well as the substrate to which the composition is applied. Volatile acid concentration is, therefore, a result-effective variable. Absent clear and convincing evidence of unexpected results demonstrating the criticality of the claimed volatile acid concentration, it would have been obvious to one of ordinary skill in the art to optimize such a result-effective variable by routine experimentation (see MPEP § 2144.05(II)(B)).

21. Claim 94 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson (EP 0 207 024 A2) in view of Lehnert (WO 89/05221 A1) and Perciwall (EP 0 016 740 A1).

The teaching of Andersson is described above and incorporated herein. The gluing system of Andersson is a formaldehyde-based adhesive, preferably resorcinol-formaldehyde or resorcinol-phenolformaldehyde (2:5-11). This reference does not teach that the gluing system is an amino resin gluing system.

Lehnert teaches the equivalence of phenol and amino resins as conventional two-component adhesives in the art of joining wooden surfaces to form laminates, including condensation products of formaldehyde and urea and/or melamine (1:28-31 and 3:37-4:9).

Based on this teaching of equivalence, it would have been obvious to one of ordinary skill in the art to modify the process of Andersson by substituting, as the gluing system, the

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amino resin gluing system of Lehnert. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of successfully joining wooden surfaces to form a laminate.

Lehnert is silent with respect to whether or not the hardener component includes a filler. Based on this fact, it is the examiner's position that one of ordinary skill in the art would have reasonably interpreted the hardener of Lehnert as free from filler. Please note: a filler amount of less than a certain % by weight is inclusive of no filler at all.

Further, it is clear that, as soon as the components are mixed, curing begins. The particular physical orientation of the strands on the substrate effect the speed and degree of curing; such would have been readily apparent to one of ordinary skill in the art. Consequently, absent clear and convincing evidence to the contrary, it would have been obvious to select the orientation of resin and hardener strands to give the desired curing rate and substrate coverage. In other words, for a quicker cure, strands are applied with a greater degree of overlap so that curing may begin before the substrates are joined.

Neither of these references teaches that the hardener comprises formic acid in an amount of 10 – 30% by weight, although Lehnert does teach: "When the adhesive is an amino resin the hardener can for example be an inorganic or organic acid, such as phosphoric acid, trichloroacetic acid, citric acid or maleic acid" [p. 4, ll. 21 – 24].

Perciwall teaches the equivalency of formic acid with phosphoric, trichloroacetic, citric, and maleic acid as a hardener for amino resin systems [p. 4, l. 37 – p. 5, l. 2]. Consequently, it would have been obvious to one of ordinary skill in the art to modify the process of Andersson in view of Lehnert so as to utilize, as the hardener composition, a composition comprising formic

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acid, as suggested by Perciwall. One of ordinary skill would have been motivated to do so by the desire and expectation of successfully curing the amino resin.

Further, Perciwall is silent as to the amount of volatile acid present in the hardener composition. Generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical [MPEP § 2144.05(II)(A)]. Further, it is the examiner's position that the amount of volatile acid in the hardener composition will effect the setting time of the resin component, and will depend on other components present in the hardener composition, as well as the nature of the substrate to which the composition is applied. Volatile acid concentration is, therefore, a result-effective variable. Absent clear and convincing evidence of unexpected results demonstrating the criticality of the claimed volatile acid concentration, it would have been obvious to one of ordinary skill in the art to optimize such a result effective variable by routine experimentation [MPEP § 2144.05(II)(B)].

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WPF 1/13/2005

William P. Fletcher III
Examiner
Art Unit 1762

B. Chen

BRET CHEN
PRIMARY EXAMINER